

MEMORANDUM

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FROM: George V. Alexeeff, Ph.D., DABT
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DATE: May 28, 1999

SUBJECT: PROPOSED ACTION LEVEL FOR 1,2,3-TRICHLOROPROPANE

Staff of the Office of Environmental Health Hazard Assessment (OEHHA) have reviewed your Department's proposed action level for 1,2,3-trichloropropane based on an oral cancer potency value of $7 \text{ (mg/kg-day)}^{-1}$ taken from the U.S. Environmental Protection Agency's (U.S. EPA) Health Effects Assessment Summary Tables document (U.S. EPA, 1997). This chemical has been found to cause benign and malignant tumors at multiple sites in the rat following gavage administration, and has been classified by U.S. EPA as a B2 carcinogen. Staff have checked the calculation and found it to be correct. This is reproduced as follows.

$$C = \frac{BW \times 10^{-6}}{q1^* \times L/\text{day}} = \frac{70 \times 10^{-6}}{7 \text{ (mg/kg-d)}^{-1} \times 2 \text{ L/day}} = 5 \times 10^{-6} \text{ mg/L} = 0.005 \text{ } \mu\text{g/L}$$

Where:

C = concentration associated with negligible risk (10^{-6} cancer risk)
BW = body weight (70kg)
q1* = upper 95% confidence limit on the cancer potency slope, $7 \text{ (mg/kg-day)}^{-1}$
L/day = 2

U.S. EPA (U.S. EPA, 1990) has determined an oral RfD for 1,2,3-trichloropropane based on noncancer endpoints – clinical chemistry changes and red blood cell mass reduction in a rat subchronic study (NTP, 1983). This RfD is $6 \times 10^{-3} \text{ mg/kg-day}$ which has incorporated an

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uncertainty factor of 1,000 and is based on a no-observed-adverse effect level of 8 mg/kg-d at 5d/wk, converted to 5.71 mg/g-d. Based on this RfD, a safe level for 1,2,3-trichloropropane in drinking water would be 0.2 mg/L (or 200 µg/L) for a 70 kg adult drinking two liters of water per day. The level based on the cancer endpoint is chosen because it is the more health conservative value.

Based on an expedited review of the information presented, OEHHA concurs with the proposed action level of 0.005 µg/L for 1,2,3-trichloropropane in drinking water. For further details on our review, contact Dr. Anna Fan at (510) 540-3165.

References

U.S. EPA (1997). Health Effects Assessment Summary Tables (HEAST) FY 1997 Update. Office of Research and Development; Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Washington, DC. EPA 540/R-97-036-PB97-921199.

U.S. EPA (1987). Integrated Risk Information System (IRIS), 1,2,3-Trichloropropane (CASRN 96-18-4) substance file (last revised 03/31/1987). (Downloaded from <http://www.epa.gov/iris/subst/0200.htm>).

NTP (National Toxicology Program) (1983). 120-day gavage study in mice and rats with 1,2,3-trichloropropane. Unpublished report prepared by Hazleton Laboratories.